

## INTERNATIONAL SEARCH REPORT

Inter national Application No

PCT/FR 03/032

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 F02M63/02 F02M69/46 F02D41/38 F02N17/00 F16K31/06

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 F02M F02D F02N F16K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PATENT ABSTRACTS OF JAPAN vol. 1997, no. 11, 28 November 1997 (1997-11-28) & JP 09 184464 A (NIPPON SOKEN INC), 15 July 1997 (1997-07-15)	1,2,6
Y	abstract paragraph '0009!	3,4
Y	US 5 758 865 A (CASEY GARY LEE) 2 June 1998 (1998-06-02) column 1, line 21 - line 40; figure 1A	3,4
A	US 4 356 980 A (KRAUSS RUDOLF) 2 November 1982 (1982-11-02) column 1, line 67 - column 2, line 53; figure 1	2,3,5
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

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\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the International filing date but later than the priority date claimed

\*T\* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*&amp;\* document member of the same patent family

Date of the actual completion of the international search

13 May 2003

Date of mailing of the international search report

20/05/2003

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 074 263 A (EMERSON CHARLES E) 24 December 1991 (1991-12-24) column 6, line 20 - line 29 column 6, line 48 - line 64 column 7, line 34 - line 47; figure 2 -----	1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
JP 09184464	A	15-07-1997	NONE	
US 5758865	A	02-06-1998	WO 9808014 A1	26-02-1998
US 4356980	A	02-11-1982	DE 2936853 A1	02-04-1981
			FR 2465142 A1	20-03-1981
			GB 2058467 A, B	08-04-1981
			JP 56049472 A	06-05-1981
US 5074263	A	24-12-1991	NONE	